



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
ALASKA OPERATIONS OFFICE
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February 10, 2012

Reply To: ETPA-083

Ms. Serena Sweet, Project Manager
Regulatory Division
CEPOA-RD
Post Office Box 6898
JBER, AK 99506-0898

RE: Chuitna Coal Project Wetland Functional Assessment

Dear Ms. Sweet,

The U.S. Environmental Protection Agency (EPA) has reviewed the Chuitna Coal Project Wetland Functional Assessment (FA) report dated March 5, 2008. The EPA has expressed concerns to the U.S. Army Corps of Engineers (Corps) about the adequacy of this FA report during recent agency discussions. As the Corps Project Manager for the Chuitna Coal Project, you have requested that the EPA provide specific information about perceived shortcomings in the FA, along with recommendations to address them. You further requested that we submit that information formally so that it might be shared with the project proponent. This letter is being transmitted in response to those requests.

The EPA does not believe that the FA report accurately describes the functions performed by the aquatic resources within the project area. The limited number of functions assessed, as well as the relatively simple functional models and attribution methods, yield incomplete information. For this reason we do not support use of the current FA report within the Supplemental Environmental Impact Statement (SEIS) currently being prepared by the Corps, nor for the future Section 404 permitting action.

The accuracy and completeness of the FA have serious implications for the SEIS and the 404 permitting action. Within the SEIS, the FA should inform the discussions of the affected environment and the comparisons of different action alternatives. In the context of Section 404 permitting, the FA informs the alternatives analysis, evaluation of the potential for significant degradation, and decisions regarding compensatory mitigation. The FA report states that the methods could be used to evaluate the restoration of wetland functions. However, it is not clear whether these methods would be used for that purpose.

The EPA acknowledges that the practice of functional assessment continues to evolve as we gain a greater understanding of how aquatic resources interact with larger scale landscape processes. We further acknowledge that all FA methodologies contain weaknesses in how they define, measure, and

attribute aquatic resource functions. Notwithstanding these realities, it is our position that the Wetland Functional Assessment report prepared for the Chuitna Coal Project is seriously flawed and that considerable analytic modifications must be made before it is used for regulatory or reclamation purposes.

Limited Number of Functions Assessed

The FA report states that existing wetland assessment methods were reviewed to develop a “comprehensive list” of potential wetland functions to assess. The functional assessment methods reviewed were: Compared to the methods reviewed, however, fewer functions, and fewer variables were used for this assessment. As described in the FA report, the provision of six wetland functions were evaluated in the field by collecting information on four principle variables with indicators. These principle variables were: water source, how water leaves the site, evidence of overbank flooding, and evidence of bank erosion.

Absent from the assessment are functions known to be provided by the project area wetlands, such as surface and shallow subsurface water storage. The provision of fish habitat was also not assessed. The FA report states that several of the assessed functions indirectly support fish. That is correct, but does not alter the reality that the provision of fish habitat is a distinct function. Arguably, the aquatic resources of greatest value within the project area are the surface streams, including the streams specified by the State as important for the spawning, rearing and migration of anadromous fish. Furthermore, the provision of fish habitat by the streams and wetlands in the project area is perceived publically to be of great value. The failure to assess and attribute known functions is a serious flaw of the FA report.

Simplified Functional Models Used

All FA methods use simplified models of aquatic resource functions, but the models used here are simpler than in the methods reviewed. From our perspective, this simplification resulted in erroneous attribution. For example, in the case of streamflow modification, the function definition and attribution focused on wetlands that receive overbank flows from a stream.

Our preference is that this function be referred to as dynamic flood water retention or flood flow desynchronization, as it is specific to the modification of flood flows. The modification of flood flows occurs within the channel as well as on the floodplain, and the model used here does not attribute the channel. Nor does it fully attribute the floodplain, due to the use of a consistent-width buffer as a surrogate for the actual floodprone width. No support for the use of the 100-foot buffer was provided in the FA report.

In addition, the attribution relied on the use of a slope percent grid to identify areas likely to receive overbank flows. The Digital Elevation Model used to derive the slope percent grid had a 20-foot resolution, arguably too coarse to use for attribution. In addition, once overbank flow occurs, floodplains receive (and moderate) flood flows from upgradient in the flood plain, not just from the stream channel.

The assessment of multiple hydrologic functions and the use of more complicated functional models would have resulted in more accurate attribution. An example would have been to use dynamic flood water retention to describe the reception, slowing, and release of flood

flows from the stream. The function of surface and shallow subsurface storage generally refers to water received from meteoric or groundwater sources rather than from surface streams. As mentioned above, this function should have been assessed here. In addition to storing water, wetlands also discharge to downgradient systems. This serves to maintain stream base flows and moderate the stream flow, although not in the way attributed in the FA.

Other examples of where simplified functional models were used were in the attribution of the groundwater discharge and recharge functions. As identified in the FA report, wetlands located in toeslope landforms were attributed as groundwater discharge locations. It is true that wetlands in toeslopes are likely to receive groundwater that intercepts the surface, but these are not the only wetlands that receive groundwater. Readily measured variables, such as surface or pore water chemistry indicate groundwater discharge and can be used for attribution.

The attribution of groundwater recharge was likewise based on simplified functional model that failed to consider that groundwater discharge and recharge can occur at different times within the same wetland due to fluctuations in the regional groundwater table and changes to the hydraulic head. Even if wetlands are underlain with low permeability materials, long retention times allow for infiltration. Wetlands can provide critical recharge of aquifers during winter when other water sources are unavailable.

Non-standard Methodologies

Although existing FA methodologies were reviewed, no existing method was selected for use in this assessment. Several of the issues mentioned above could perhaps have been avoided if an existing method had been selected for use. In particular, Hall et al. 2002 was developed for this geographic region and arguably represented the ‘state of the science’ at the time. Although the use of an HGM regional guidebook is not preferred in all cases, there are at least three advantages for a project such as the Chuitna Coal Project.

First, the data is site-specific and quantitative, which increases the robustness of the attribution. Second, the functional capacity indices calculated allow the degree to which a function is performed to be measured. Lastly, the regional guidebooks were developed with agency participation and the results are therefore more likely to be accepted, provided that the protocols were followed correctly.

Assessment and attribution methods were developed specifically for this FA, and nowhere is this more obvious than in the attribution of the wildlife habitat function. For reasons that are not explained in the FA report, the method did not use the habitat use attributions provided by ABR, inc. The method did not attribute every wetland polygon that provided wildlife habitat. It did not attribute every wetland that provided high or essential use habitat. It didn’t attribute every wetland that provided habitat for wetland-dependent species, nor did it attribute every wetland that provided essential habitat for wetland-dependent species. Why not? As wildlife use of the wetlands in the project area was assessed and attributed (ranked) by ABR, inc. it is not clear what the subsequent analysis was intended to assess. In comparison to every other FA methodology, the attribution of the wildlife habitat function is an extreme underestimation.

Resolution of FA Issues

The position of the EPA is that the existing FA is of limited value for either the SEIS or the 404 permitting action. We propose that the FA be repeated using a modified methodology. Attribution would still be via GIS, but would be based on the known characteristics of wetland ecosystem types described in the Cook Inlet classification developed by Mike Gracz of the Kenai Watershed Forum. The wetland polygon layer would be classified according to that classification and the wetlands attributed for a larger suite of functions and values. The FA would be analogous to a landscape-level attribution project currently being conducted in the Matanuska-Susitna Borough. Site-specific wetlands, soils, vegetation and wildlife data would be used to validate the GIS functional attribution.

This proposal would utilize the site-specific data already collected, would not require additional field work, and would allow rapid functional attribution using a method supported by the agencies.

The EPA appreciates the opportunity to raise these issues regarding the Chuitna Coal Project Wetland Functional Assessment. We are prepared to assist the Corps and project proponent in any way we can to resolve these issues. If you have any questions regarding this letter, please contact me at (907) 271-1480, or by email at lcroix.matthew@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "Matthew LaCroix". The signature is written in a cursive, flowing style.

Matthew LaCroix, Biologist
Aquatic Resources Unit, Alaska Operations Office
Office of Ecosystems, Tribal and Public Affairs